614 WATERING FACILITY
CONSTRUCTION SPECIFICATION

1. SCOPE

The work shall consist of furnishing materials and installing all components of the watering facility, as outlined in this specification and the drawings.

2. MATERIALS

All materials used shall conform to the quality and grade noted on the plans, set forth in Section 6, or as otherwise listed below:

CONCRETE AND MASONARY
Precast concrete and masonry structures are acceptable when their design and construction have been reviewed and approved. Concrete shall have a minimum compressive strength, at 28 days, of 3000 psi. If the supplier cannot show evidence that a mix will meet strength requirements, a mix with a maximum net water content of seven gallons per bag (94#) of cement and a minimum cement content of six bags per cubic yard of concrete, may be used. Course Aggregates shall be #57 or #67 for ready-mix and hand-mixed concrete. Hand-mixed concrete shall be mixed at a ratio of 1 part cement, 2 parts sand, and 3 parts coarse aggregate. Pre-bagged concrete mix will be mixed according to the manufacturer's recommendation. Mixing water will be clean and free of substances that would affect the strength or durability of the concrete.

Concrete shall be mixed to a consistency that will allow proper consolidation (Approximately 3"-6" Slump).

METAL
Steel tanks shall have a minimum thickness of 20 gauge. The steel shall be galvanized for protection from deterioration.

WOOD
Wood products used for anchoring or protection measures shall be graded and stamped by an agency accredited by the American Lumber Standards Committee as meeting the required species, grade, and moisture content. Pressure treated wood products shall be Douglas Fir, Southern Yellow Pine, or as otherwise specified in Section 6 or on the drawings. They shall be treated with preservatives in accordance with the American Wood Preservers Association (AWPA) Standard C16, "Wood Used on Farms, Pressure Treatment." In the absence of a stamp of quality, the contractor or material supplier shall provide written certification that the wood meets the designated quality criteria.

RUBBER
Rubber tires, used for troughs, shall be free of holes or deep abrasions.
The tire sidewall shall be cut at an inward angle so to not expose any metal chords in the tire.

Tires that were filled with antifreeze or other toxic liquids can not be used for watering facilities, unless they are thoroughly cleaned before use. A recommended cleaning procedure would consist of scrubbing the inside of the tire with a detergent and rinsing with a high pressure washer. This process should be repeated at least four (4) times.

The tire shall be placed such that approximately 1/3 to1/2 of the tire is below grade and the tire is installed on compacted soil. A 3" to 4" layer of compacted clay shall be placed as a foundation or seal before installing the tire. A 4" to 6" thick slab of concrete shall be placed to seal the hole in the bottom of the tire trough.

PLASTIC AND FIBERGLASS
Plastic and fiberglass structures shall be made of ultraviolet resistant materials or

shall have a durable coating for protection from sunlight.

Cast-Iron, plastic, or fiberglass bathtubs are not acceptable for use, as a trough or tank.

AGGREGATE & GEOTEXTILE
Aggregates used for stabilization around the watering facilities shall meet the requirements of Penn DOT, Publication 408, Section 703, for coarse aggregate.

The size and gradation shall be as specified in Section 6 or on the drawings. The aggregate shall be hard, durable, and resistant to weathering.

Geotextile fabrics, used for in the construction of the stabilization around the watering facility, shall meet the requirements as outlined in PennDOT Publication 408, Section 735, Table A, Class IV, Type A – Separation. The geotextile material shall be non-woven or woven.

3. FOUNDATION PREPARATION

The foundation area, for the watering facility and related stabilization areas shall be cleared of organic matter and all other unsuitable material. When backfill is required to establish planned grade lines, within 2' of a structure, the backfill shall be compacted by hand-operated compaction equipment.

The foundation area and the immediately surrounding area shall be smoothed and graded to permit free drainage of surface water.

All construction shall be performed in a workmanlike manner and the job site shall have a neat appearance when finished.

4. EROSION AND POLLUTION CONTROL

Construction operations will be carried out in such a manner so erosion and air and water pollution will be minimized.

5. SEEDING

All disturbed areas shall be revegetated according to the recommendations for permanent seeding as stated in NRCS Conservation Practice Standard 342, Critical Area Planting or the Pennsylvania Agronomy Guide.

6. ADDITIONAL CONDITIONS WHICH APPLY TO THIS PROJECT ARE: